ELECHOUSE RFID Serial Config Product Test Guide

This guide describes how to test the current V0.1H main control + HF product with the browser-based rfid-serial-config page. It covers Web Serial connection, device status reading, WiFi setup, USB CDC command interaction, UART output configuration, and HF function checks.

Test Date 2026-07-04	**Device Under Test** Network RFID Reader V0.1H
Serial Port COM3, 115200 8N1	**Test Page** ELECHOUSE RFID Serial Config Tool

1. Test Scope

This document covers tests that can be performed directly from the Serial Config page: Web Serial connection, status reading, WiFi parameter setup, USB CDC command interaction, product UART interface setup, reader output setup, HF scan mode, and the HF card emulation configuration entry.

> The ELECHOUSE TCP Broker online test is intentionally excluded from this guide and should be documented separately.

2. Test Environment

Browser

Desktop Google Chrome on Windows with Web Serial support.

Hardware Connection

The product is connected to the PC through USB CDC and appears as COM3.

Serial Parameters

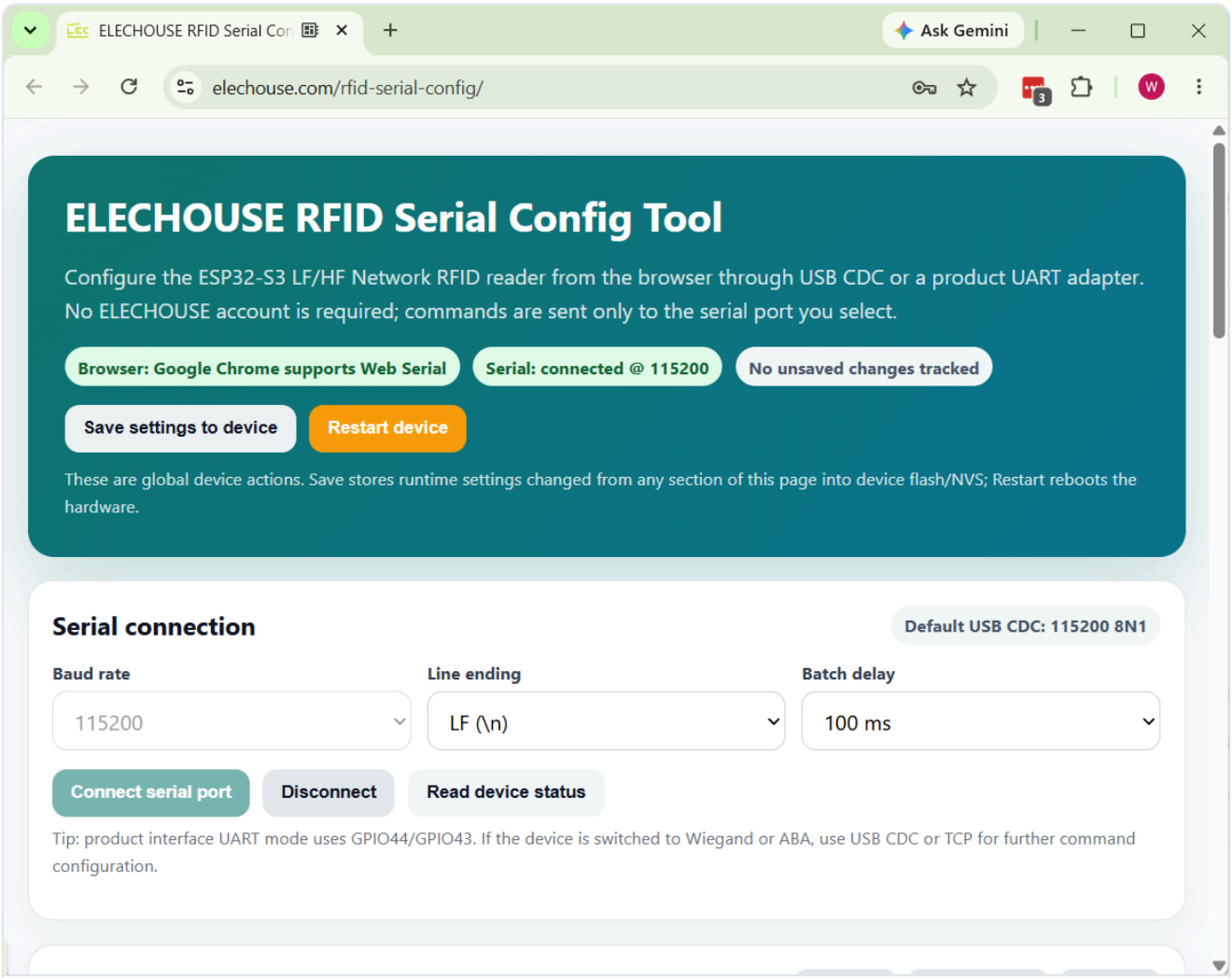
115200 baud, 8 data bits, no parity, 1 stop bit.

WiFi Parameters

SSID: `YOU`. The password is recorded as `B********7`.

3. Connect COM3

1. Open `https://www.elechouse.com/rfid-serial-config/`.
2. Confirm that the top status area shows `Browser: Google Chrome supports Web Serial`.
3. Click `Connect serial port`.
4. Select `COM3` in the browser serial port picker and confirm the connection.
5. The top status area should show `Serial: connected @ 115200`.



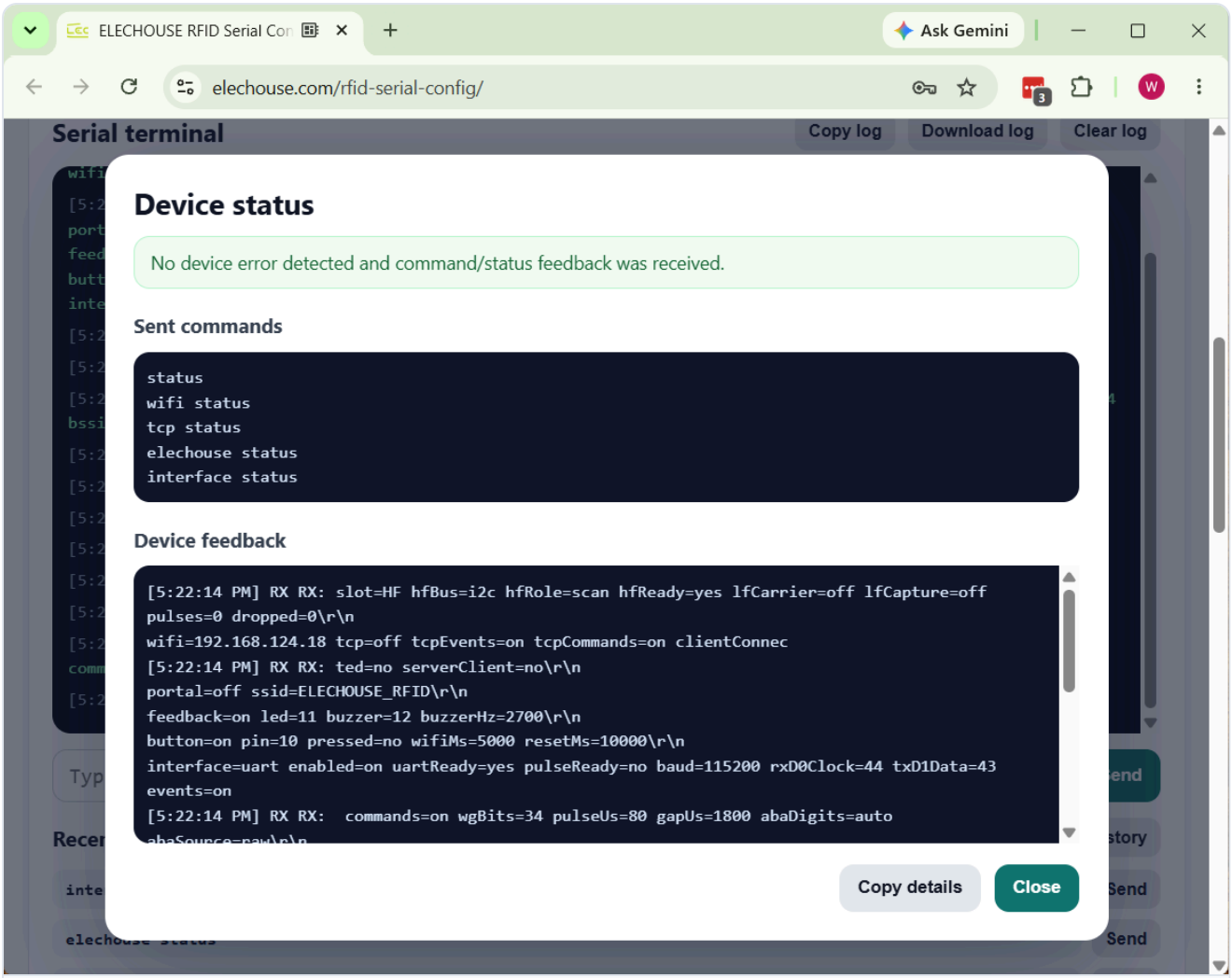
After a successful connection, the page shows Web Serial support and Serial connected @ 115200.

4. Read Device Status

1. Click `Read device status`.
2. The page sends `status`, `wifi status`, `tcp status`, `elechouse status`, and `interface status`.
3. Check that the result dialog reports no device error, then review the Device feedback content.

Measured result: device status was read successfully and the page reported: No device error detected and command/status feedback was received.

```
slot=HF hfBus=i2c hfRole=scan hfReady=yes
wifi ssid=YOU passLen=9 hostname=ELECHOUSE_RFID status=CONNECTED(3) ip=192.168.124.18
rssi=-54
tcp mode=off listen=9000 events=on commands=on
interface mode=uart enabled=yes uartReady=yes d0Clock=44 d1Data=43 events=on commands=on
baud=115200
```

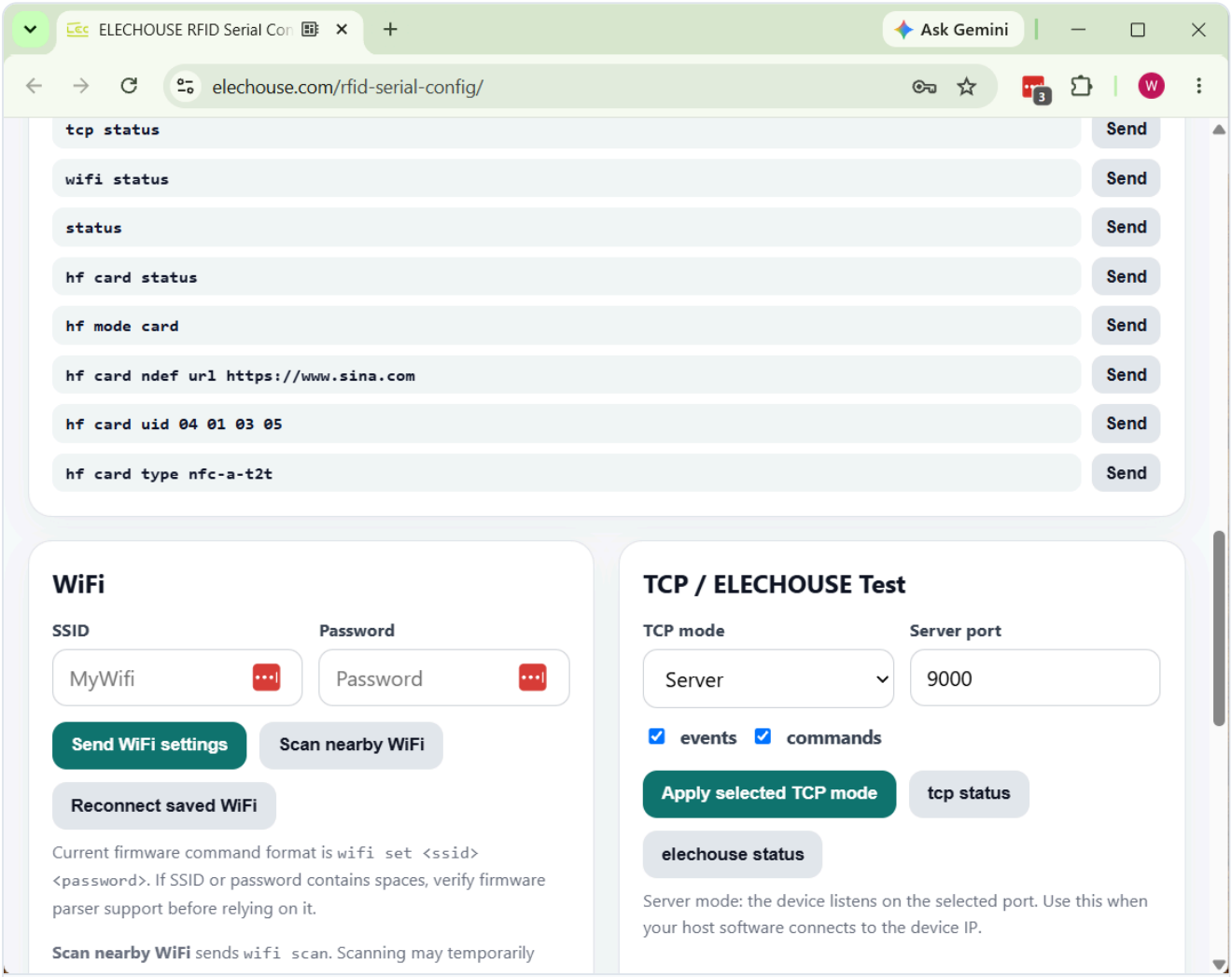


The Read device status result dialog shows the commands sent by the page and the feedback returned by the device.

5. WiFi Configuration

1. Enter `YOU` in the SSID field.
2. Enter the WiFi password in the Password field. Record the password in masked form in documentation.
3. Click `Send WiFi settings`. The page sends `wifi set <ssid> <password>`.
4. Click `wifi status` or run `Read device status` again to verify the connection.

> Measured result: WiFi is connected to `YOU` and the device IP address is `192.168.124.18`.

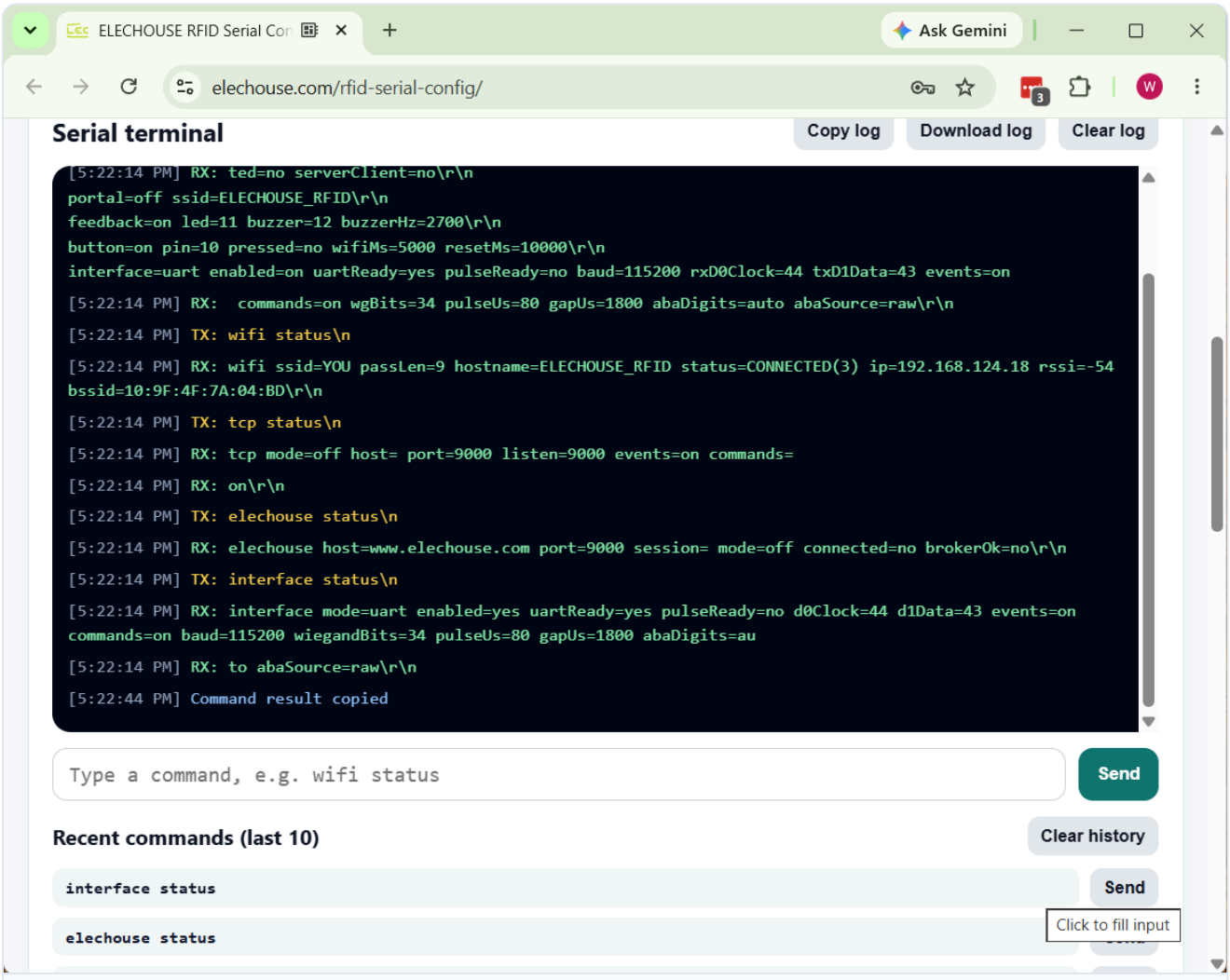


The WiFi section is used to write SSID and password, scan nearby WiFi networks, or reconnect to saved WiFi settings.

6. Command Test

The Serial Terminal can send standard configuration commands directly to the device. The default line ending is LF, which matches the current firmware command parser.

Test Item	Command	Expected Result
Device status	`status`	Returns slot, HF/LF, WiFi, TCP, interface, feedback, and other device status fields.
WiFi status	`wifi status`	Returns SSID, connection state, IP address, and RSSI.
Interface status	`interface status`	Returns the active UART/Wiegand/ABA mode and output parameters.
HF status	`hf status`	Returns HF mode, ready state, and polling technology settings.

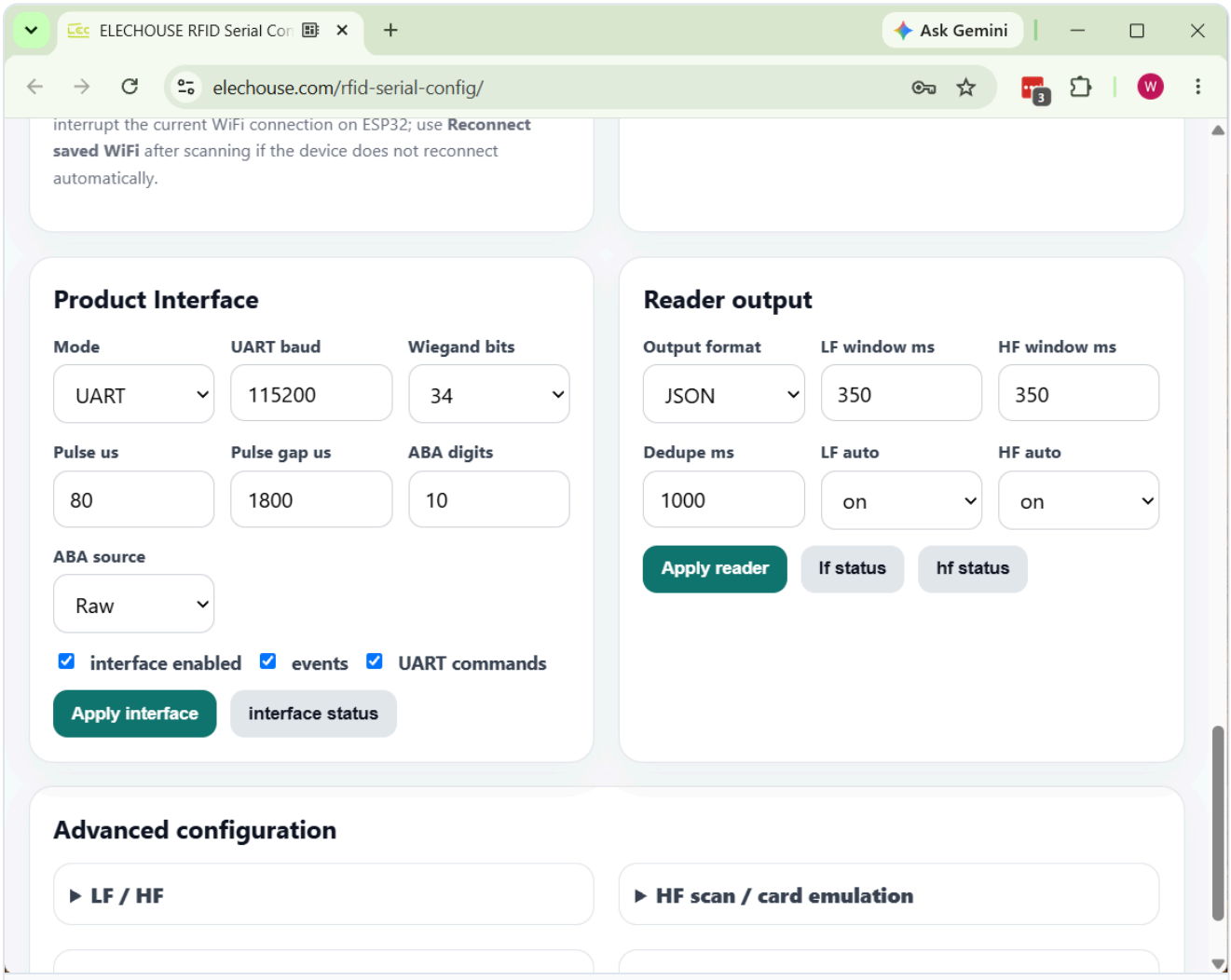


The Serial Terminal log can be used as a test record. TX commands are shown in yellow and RX device replies are shown in green.

7. UART Output Configuration

V0.1H currently uses UART as the primary product data output interface. For this test, keep UART enabled, events enabled, and UART commands enabled.

Parameter	Measured Value	Description
Mode	`UART`	The product interface outputs data through UART.
UART baud	`115200`	Matches the default USB CDC test baud rate.
GPIO	`rxD0Clock=44`, `txD1Data=43`	Current hardware interface assignment.
events / commands	`on` / `on`	Allows event output and also allows commands to be sent through UART.



The Product Interface section configures UART, Wiegand, or ABA. V0.1H testing uses UART by default.

8. Reader Output Configuration

Reader output controls the card event format, duplicate suppression window, and LF/HF automatic reading switches.

Parameter	Recommended Test Value	Purpose
Output format	`JSON`	Easy for host software to parse card events.
LF/HF window	`350 ms` / `350 ms`	Card read window duration.
Dedupe	`1000 ms`	Suppresses repeated output for the same card.
HF auto	`on`	Required for V0.1H HF card reading tests.

9. HF Reading and Card Emulation

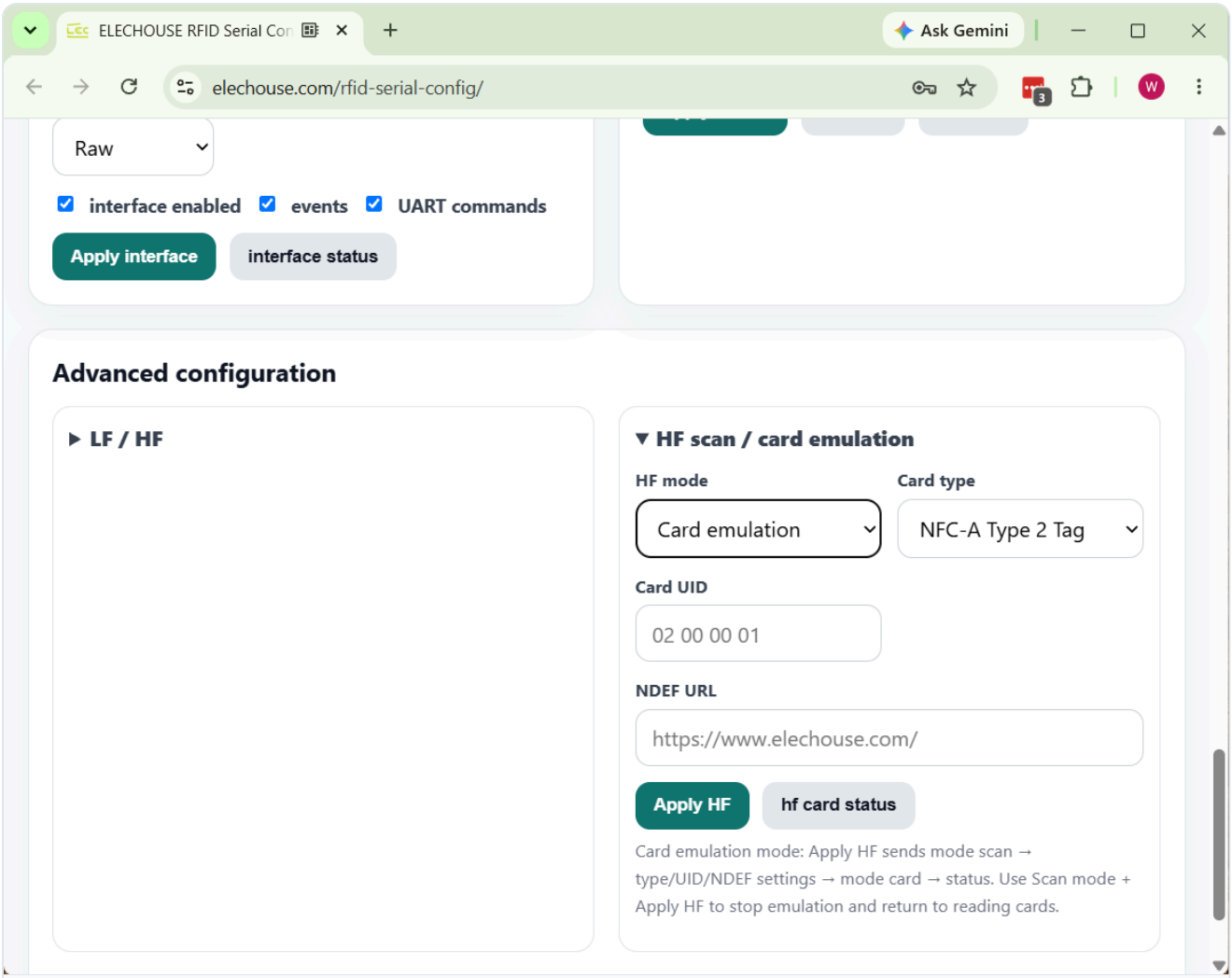
HF card reading test

1. Confirm that HF mode is set to `Scan`.
2. Confirm that `ISO14443A` is enabled. Enable ISO14443B, NFC-F, or ISO15693 only when those card types need to be tested.
3. Place an HF card on the antenna area.
4. Watch the Serial Terminal for an HF card event or UID output.

> Measured status: HF returned `hfBus=i2c`, `hfRole=scan`, and `hfReady=yes`, so HF scanning is ready.

HF card emulation configuration

1. Expand `HF scan / card emulation` in Advanced configuration.
2. Set HF mode to `Card emulation`.
3. Select a card type, such as `NFC-A Type 2 Tag` or `NFC-A Type 4 Tag`.
4. Enter the Card UID and NDEF URL.
5. Click `Apply HF`, then read the emulated card with an NFC-enabled phone.
6. The expected phone-side result is the configured NDEF URL or a tag record matching the configured UID/card type.



In HF card emulation mode, the page provides card type, UID, and NDEF URL settings.

10. Save and Reboot

1. After confirming the settings, click `Save settings to device` at the top of the page.
2. To verify persistence, click `Restart device` or power-cycle the device manually.
3. After reboot, reconnect COM3 and run `Read device status`.
4. Confirm that WiFi, interface, reader output, and HF mode settings remain as expected.

Reading status does not change device configuration. After clicking Apply or Send WiFi settings, run Save settings to device if the settings must persist after power loss.

11. Troubleshooting

Symptom	Possible Cause	Action
The browser does not show the COM list	The browser does not support Web Serial, or the click was not a real user gesture.	Use desktop Chrome or Edge on Windows and click Connect serial port manually.
COM3 cannot be opened	The serial port is occupied by another tool.	Close serial terminals, flashing tools, or other browser pages that may be using COM3.
No response after sending commands	Incorrect baud rate or line ending.	Use 115200 8N1 and set Line ending to LF.
WiFi does not connect after setup	Wrong SSID/password or weak signal.	Run `wifi status` and check status, IP address, and RSSI.
No output after placing an HF card	HF is not initialized, the device is not in Scan mode, or the card type is unsupported.	Run `hf status` and confirm `hfReady=yes` and ISO14443A is enabled.
The phone cannot read card emulation	NFC is disabled on the phone, card type/UID settings are not suitable, or the device has not entered card mode.	Run `hf card status` and confirm `role=card` and `active=yes`.

12. Test Record

Test Item	Result	Record
Chrome Web Serial connection to COM3	PASS	The page showed Serial connected @ 115200.
Read device status	PASS	All status commands returned without a device error.
WiFi status	PASS	SSID is YOU, status is CONNECTED, IP is 192.168.124.18.
UART interface	PASS	UART enabled, baud 115200, events/commands on.
HF scan ready	PASS	hfRole=scan and hfReady=yes.
HF card emulation configuration entry	PASS	The page can switch to Card emulation and shows card type, UID, and NDEF URL settings.